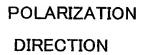
FIG. 1A



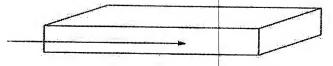


FIG. 1B

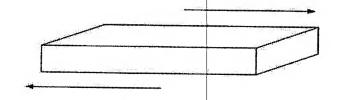


FIG. 2

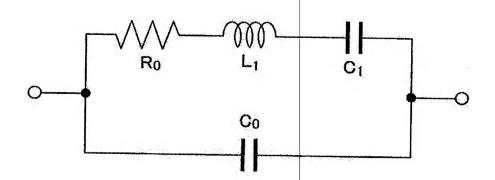


FIG. 3

ELECTRODE OVERLAPPING LENGTH

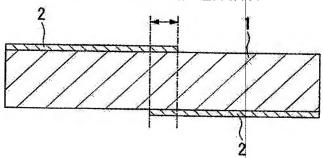


FIG. 4

SPECIMEN		ADDITIVE	ν)]»qd	1AIN COI 1n1/3NI (x+y-	/3Nb ₂ $/3$ $/x$ T $(x+y+z=1)$	MAIN COMPONENT $Pb_{\alpha}[(Mn_{1}\nearrow_{3}Nb_{2}\nearrow_{3})_{x}Ti_{y}Zr_{z}]O_{3}$ $(x+y+z=1)$	ELECTRIC PROPERTIES	MECHANICAL STRENGTH	HEAT RESISTING AL- PROPERTIES CONTAINING	AL- CONTAINING
Š	Al ₂ O ₃	Al ₂ O ₃ SiO ₂	l .	×	À		Q _{max}	σ_{b3}	AF ₀	PHASE
	(wt%)	(wt%)	(mol)	(mol)	(mol)	(low)		(N/mm^2)	(%)	
-	0.1						120	155	0.11	×
2	0.3				24 (24		135	172	0.07	0
3	0.5	0.02	0.99	0.10	0.53	0.37	136	179	0.08	0
4	0.7		·		2. Am		130	192	0.07	0
5	1.0						133	192	0.07	0
	The second secon		The state of the s				-			

FIG. 5

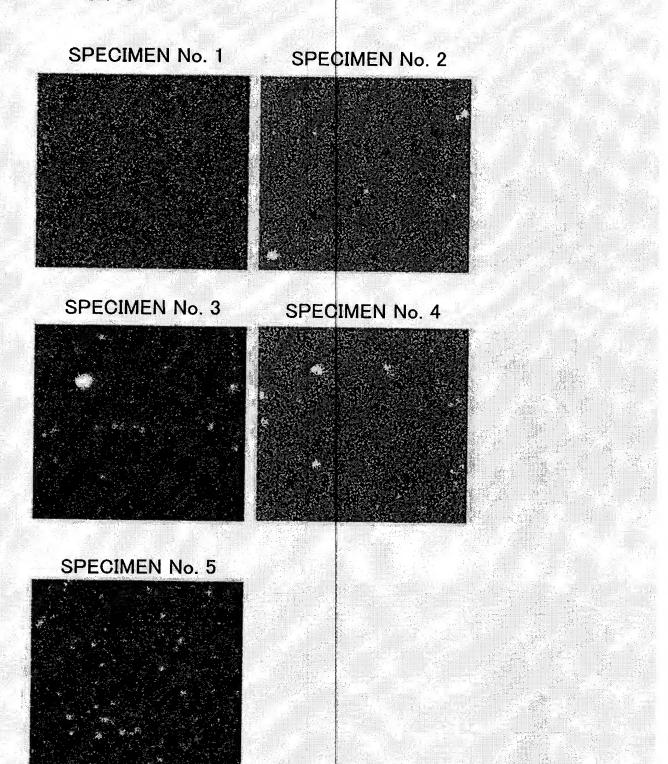


FIG. 6

SPECIMEN ADDITIVE(β) Pb $_{\alpha}$ [(Mn _{1/3} Nb _{2/3}) $_{x}$ Ti $_{y}$ Zr $_{z}$]O $_{3}$ No.) Pb _a [닌	MA (Mr	MAIN COMPON (Mn _{1/3} Nb _{2/3} (x+y+z=1)	OMPONENT Nb _{2/3}) _x Ti _y ; +y+z=1)	VT i _y Zr _z]O ₃	ELECTRIC PROPERTIES	HEAT RESISTING PROPERTIES	TEMPEI	TEMPERATURE CHARACTERISTICS
Al_2O_3 SiO_2 α x (wt%) (wt%) (mol) (mol) (n	(mol) (mol)	x (lom)		5	y (mol)	z (mol)	Q _{max}	\[\lambda \kappa_{15} \] (%)	AF ₀ (-40°C)	\(\Delta\) F ₀ (85°C)
0.01			······································				135	3.9	0.18	0.08
0.02							125	3.0	0.16	0.05
0.10 0.998 0			0	0	0.51	0.39	128	2.9	0.21	0.10
0.50							145	1.9	0.27	0.14
1.00							110	3.0	0.33	0.19
0.10							121	2.3	0.09	0.05
0.30		Ç					135	2.3	0.04	0.03
		2	2				136	2.4	0.04	0.07
0.70							121	2.3	0.03	0.10
0.990 0			0	0	0.53	0.37	133	2.2	0.04	0.07
1.50		***************************************	······································		***************************************		122	2.2	0.02	90.0
2.00			······································				121	2.1	0.02	0.10
3.00							104	2.4	0.00	60.0
10.00				1			73	2.8	0.01	0.13

FIG. 7

SPECI- MEN No.	ADD	ITIVE	$Pb_{\alpha}[($	Mn _{1∕3} l	MPONENT $Nb_{2/3}$, Ti_yZr_z $x+y+z=1$)		ELECTRIC PROPER- TIES	HEAT RESISTING PROPERTIES		RATURE FERISTICS
	Al ₂ O ₃ (wt%)	SiO ₂ (wt%)	α (mol)	x (mol)	y (mol)	z (mol)	Q _{max}	Δk ₁₅ (%)	ΔF ₀ (-40°C)	ΔF ₀ (85°C)
20 *				0.02	0.56	0.42	29	1.1	0.24	0.14
21					0.58	0.38	81	0.9	0.11	0.14
22				0.04	0.56	0.40	85	1.0	0.25	0.02
23				0.04	0.55	0.41	117	1.4	0.29	0.09
24 *					0.54	0.42	108	1,4	0.54	0.19
25				0.06	0.56	0.38	95	1.1	0.09	0.04
26 *				0.00	0.52	0.42	177	1.5	1.10	0.77
27 *				0.08	0.59	0.33	98	1.5	0.28	0.41
28				0.08	0.54	0.38	112	1.7	0.11	0.02
29					0.55	0.36	114	1.8	0.03	0.19
30				0.09	0.54	0.37	119	1.8	0.05	0.11
31				0.09	0.53	0.38	124	1.5	0.13	0.03
32			0.990		0.52	0.39	154	1.8	0.24	0.07
33					0.58	0.32	81	1.7	0.23	0.30
34	0.5	0.02			0.54	0.36	147	2.1	0.02	0.14
35				0.10	0.53	0.37	146	1.8	0.05	0.06
36					0.52	0.38	158	1.7	0.14	0.02
37	9	É.			0.51	0.39	183	1.6	0.25	0.13
38					0.53	0.36	135	2.7	0.00	0.09
39				0.11	0.52	0.37	127	1.9	0.07	0.00
40				0.11	0.51	0.38	163	2.0	0.16	0.10
41					0.50	0.39	170	2.0	0.27	0.22
42				0.12	0.58	0.30	80	2.2	0.29	0.40
43					0.56	0.32	98	2.3	0.20	0.28
44				ľ	0.50	0.38	177	2.6	0.13	0.15
45					0.55	0.36	128	1.3	0.00	0.17
46			0.995	0.09	0.54	0.37	131	1.6	0.08	0.08
47			0.550	0.09	0.53	0.38	129	1.2	0.14	0.02
48		-1	111,000		0.52	0.39	154	0.8	0.26	0.10

FIG. 8

		T	1	1	7	1		1	_	7	7		-
TEMPERATURE CHARACTERISTICS	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0.25	0.23	0.07	0:30	0.17	0.09	0.12	0.17	0.15	0.13	0.04	0.13
TEMPE	\DF ₀ (-40°C)	0.40	0.35	0.12	0.15	0.03	0.05	0.25	0.30	0.25	0.15	0.09	0.16
HEAT RESISTING PROPERTIES		2.2	2.0	2.7	2.8	1.9	1.6	2.9	2.7	2.2	4.5	4.7	4.2
MAIN COMPONENT $Pb_{\alpha}[(Mn_{1/3}Nb_{2/3})_{x}Ti_{y}Zr_{z}]O_{3} PROPER-(x+v+z=1)$ TIFS	Q max	141	145	166	107	119	140	147	138	131	81	129	120
IT yZr _z]0 ₃	z (mol)	0.39	0.39	0.39	0.36	0.38	0.39	0.39	0.39	0.39	0.39	0.39	0.39
4PONEN 2/3) xTi z=1)	y (lom)	0.51	0.51	0.51	0.55	0.53	0.52	0.51	0.51	0.51	0.51	0.51	0.51
MAIN COMPONENT Mn _{1/3} Nb _{2/3}) _x Ti _y ; (x+y+z=1)	× (lom)	0.10	0.10	0.10	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10
M Pb _α [(N	a (mol)	1.000	1.000	1.000	0.995	0.995	0.995	0.990	0.990	0.990	1.000	1.000	1.000
	SiO ₂ (wt%)		244				5	0.02			L		h
	3 (wt%)	1	1	l	1	1	1	1	1	L	0.20	0.30	0.50
Щ	In_2O_3 (wt%).	-	1	1	1	ı		1	1	0.05	ı	li i	1
ADDITIVE	Sc ₂ O ₃ (wt%)	1		1	1	-	1	0.02	0.10	ı	ſ	1	ı
	Ta ₂ O ₅ (wt%)	1	ı	0.50	0.50	0.50	0.50	1	1	ı	1	`1	ı
	$Al_2O_3 \mid Ga_2O_3 \mid Ta_2O_5 \mid Sc_2O_3 \mid (wt\%) \mid (wt\%) \mid (wt\%) \mid (wt\%)$	0.02	0.10	1	1	1	1	1	ı	1	1	ı	1
· · · · · · · · · · · · · · · · · · ·	Al ₂ O ₃ (wt%)	l	ı	ı	1	ı	1	ı		0.45	ı	1	1
SPECI-		49	20	21	52	53	54	55	56	57	58*	59	*09